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November 24, 1999

Darron Haddock
Division of Oil Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

Copy Darron
ACT/007/013 #2

Subject: 2nd Technical Analysis Response

Dear Mr. Haddock;

Please find enclosed UEI's responses to the 2nd Technical Analysis.

It was very helpful meeting with your technical staff on a one-on-one basis to discuss each of the deficiencies in the Technical Analysis. I have attached a summary sheet showing how UEI has addressed each of the deficiencies. Note that the summary sheet was taken directly from the TA summary. Hopefully using the same format as the TA will expedite the review process.

As per Dave Darby's request two (2) copies of the redline, strike out have been included to expedite review. The C1 form is included. The C2 form will be submitted with the actual changed pages once the redline copies have been approved. In addition a electronic copy of the redline changes have been emailed to Dave Darby.

Hopefully with this submittal you can approve the Lila Canyon significant revision to the Horse Canyon Mining and Reclamation Plan.

Should any section of any chapter be determined to be technically deficient I would appreciate being notified immediately so an appropriate response can be prepared.

Sincerely,

R. Jay Marshall

R. Jay Marshall P.E.
Chief Engineer

RESPONSE TO OUTSTANDING DEFICIENCIES 2nd TA

ADMINISTRATIVE INFORMATION

R645-301-112.310, Ownership and control information in the application is unclear. The application is required to show the ownership or control relationship of the persons that own or control the applicant, including percentage of ownership and location in organizational structure. Additional information about officers and directors and coal mining and reclamation operations may be needed.

After discussions with Paul Baker it was determined that a family tree showing Coal Resources as 100% owner of UEI. was not needed.
Replace the "Additional Information Ownership & Control page located at the front of Appendix 1-7 of Part "A" with the new page containing EIN numbers for UtahAmerican Energy, Inc. and Coal Resources, Inc.

R645-301-112.500 and -112.600, Land ownership information in Table 1-1 and Plates 4-1, 5-3, and 5-4 needs to be consistent and accurate.

Plate 5-3 was removed from the plan on July 30, 1999. Plate 5-4 shows coal ownership not land ownership. Table 1-1 shows federal coal leases not land ownership. Plate 4-1 & Table 4-2 show land ownership and are consistent and accurate.
Text has been added to Page 7 of Chapter 4 showing William Marsing Livestock as a contiguous surface owner. Plate 5-4 has been modified to show the following changes in coal ownership all in T16S R14E. In section 4 the State owns S2SW4. In section 32 the State owns all. In section 25 the State does not own NE4SW4 it belongs to the BLM.

R645-301-114, Acreage figures in the application need to correspond.

Page 10 of Chapter 4 has been changed to make all acreage numbers correspond.

R645-301-114, The application needs to include right of entry information for the portions of the proposed revised permit area in the E½ SE¼ and SW¼ of Section 15 of Township 16 South, Range 14 East, the proposed facilities area.

Will include the BLM ROW information in Appendix 1-4 when approved.

R645-301-115, The application needs to contain approval from the public road authority authorizing mining and reclamation operations within 100 feet of a public road.

The Road MOU with Emery County has been added to Appendix 1-4.

R645-301-117.100, The certificate of insurance needs to be changed to be in compliance with Division

requirements.

The insurance certificate has been changed and added to Appendix 8-2 of part "B" and I-3 of part "A" The new certificate reflects the following:

1) Certificate Holder is DOGM.

2) Description of operations includes name of mine, & mine number.

3) First provider (no deductible) 300K per occurrence, 500K aggregate.

ENVIRONMENTAL RESOURCE INFORMATION

R645-301-521.190, The Permittee must send the Division a legal description of the permit area. The legal description should describe all lands in the permit to the nearest quarter quarter section. The Permittee must also state how many acres in the permit area are Federal, State or private.

Table 4-2 Pages 5 & 6 of Chapter 4 was submitted July 30, 1999. The submittal on July 30, 1999 gives the legal description of the total permit area including parts "A" and "B". It also shows the number of acres of Federal, State and Private. In addition it shows who owns the private

R645-301-724 The applicant should provide seasonal and monthly records of precipitation data. The applicant should submit seasonal temperature data.

Added to Section 724.400.

R645-301-131, All technical data submitted in the permit application must be accompanied by the names of persons or organizations that collected and analyzed the data, dates of the collection and analysis of the data, and descriptions of the methodology used to collect and analyze the data. This information is not complete for some studies in Appendices 3-1 and 3-2.

Appendix 3-1 was completed by U.S. Steel and Kaiser Coal as stated on Page VIII-3 of the Horse Canyon Vegetation Study. Methodology for Appendix 3-1 can be found on Page VIII-5. The South Lease Vegetation Study is believed to have been completed by Frank Smith of ACZ Engineering. The date of the study found in Appendix 3-2 can be found on Page IX-6 and the methodology can be found on Page IX-7. The site specific study for Lila Canyon can be at the end of Appendix 3-2 along with the dates and methodology.

R645-301-321, The applicant needs to provide vegetation information adequate to statistically compare the area that would be disturbed with a reference area or range site or adequate to use as a baseline success standard. This includes an adequate number of samples to compare proposed disturbed and reference areas statistically. The entire proposed disturbed area needs to be included in the sample. In addition, the applicant should provide a discussion of other aspects important in comparing the proposed disturbed and reference areas, such as slope, aspect, and soils.

The information can be found at the end of Appendix 3-2 in the New (1999) Lila Canyon Vegetation Study.

R645-301-321, The applicant needs to check plants identified as *Ferocactus* sp. and Engelmann spruce. If the identifications are correct, the plants would be state records for elevation and range.

The identification was incorrect and the Text in the New Lila Canyon Vegetation Study (Appendix 3-2) has been corrected.

R645-301-322, The Fish and Wildlife Service commented, and the Division agrees, that Table 3-1 either needs a complete listing of threatened and endangered species that occur in Emery county or it needs to be eliminated. If eliminated, the application should mention the Fish and Wildlife Service believes there is potential habitat for the southwestern willow flycatcher in Emery county.

Table 3-1 on Page 7 has been modified.

R645-301-322, The applicant needs to confirm whether habitat for the southwestern willow flycatcher exists in the proposed addition to the permit area. While there is no indication this habitat is present, and while this is discussed in this analysis, the application needs to contain this documentation.

Text in Section 322.210 and Table 3-1 discusses the habitat for the Southwestern Willow Flycatcher.

R645-301-322, The maps showing wildlife habitat need to contain the information provided on USGS 1:24,000 scale maps, including contours. At least one of the maps showing raptor nests should show the area of the proposed facilities, and information on nest locations should be consolidated onto one map. The map(s) need(s) to be of a small enough scale that the Division can make accurate measurements. Also, a map needs to include an overlay of the mine workings to better show which nests could be affected by subsidence.

Plates 3-1 shows the eagle nests as they relate to other wildlife information. The new Plate 5-3 shows the nests as they relate to subsidence and the mine workings.

R645-301-322, The application needs to discuss the raptor nests near the proposed facilities area and show whether they are visible from the mine or if they are shielded by vegetation or topography. It also needs to discuss potential effects from the proposed mine.

Section 322.320 on Page 11 discusses the nests and potential effects from the proposed mine.

R645-301-322, It appears the applicant's consultant searched for and did not find Despain footcactus (*Pediocactus despainii*) and the Wright fishhook cactus (*Sclerocactus wrightiae*) in the proposed disturbed area. This needs to be documented in the application.

Appendix 3-4 has been modified to include Despain footcactus and Wright fishhook cactus.

R645-301-222 through R645-301-222.300, Appendix 2-2 does not contain information for the RZH soil map unit which is shown on the general Order 3 soil map 2-1 as located within the Permit Area "B" for Lila Canyon boundary.

Information for the RZH soil map unit has been added to Appendix 2-2 after RR and RWG and before UMF2.

R645-301-141, The Order 1 soil survey map, both in Appendix 2-3 and on Plate 2-2, and the Salvageable Soils Map, Appendix A2 of Appendix 2-3, have discontinuous 25 feet contour lines within the surface disturbance area. Present this map with continuous contour lines.

The 25' contour lines have been to the following maps:

Plate 2-2
Plate 2-3
A1 in Appendix 2-3
A2 in Appendix 2-3

R645-301-411, In one section, the application says there are no agricultural activities within the proposed addition to the permit area; however, grazing is considered an agricultural activity. This needs to be corrected.

Text on Page 2 section 411.110 was changed to read "Other than grazing, limited agriculture activities.....".

R645-301-411, The Bureau of Land management's 1999 Utah Wilderness Inventory indicates part of the proposed addition to the permit area has wilderness characteristics, including land immediately adjacent to and possibly overlapping the proposed disturbed area. The application needs to provide documentation of the Bureau of Land Management's management plans for the area.

The BLM's Land Management plans for the inventory areas have been added to Appendix 4-2.

R645-302.122, -624.130 - Outside sources are referenced many times but the outside sources are not adequately described or listed in a "reference" section.

Text in Chapter 6 has been changed on Pages 7 & 40 removing all outside source references.

R645-301-302.122, -624.130, -624.320 - The applicant asserts that over 100-years of mining experience at the adjacent Sunnyside Mines indicates that none of the horizons contain acid- or toxic-forming materials in quantities sufficient to be considered a problem, but no data are presented to substantiate this assertion.

Text on Page 39 of Chapter 6 has been reworded. A sentence fragment on the top of Page 39 has been removed.

R645-301-624.320 - There are no reports of chemical analyses for acid- or toxic-forming or alkalinity-producing materials and their content in the strata immediately above and below the coal seam to be mined, including the rock through which the tunnels will be built.

The commitment to test the slope rock from the tunnels which would include the strata immediately above and below the coal seam was made in the July 30, 1999 submittal in sections 536, 536.300 and 537.210.

R645-301-624, -624.210 - Two wells were located in the alluvium in lower Horse Canyon Creek. It is not clear whether the well that is nearer the Horse Canyon surface facilities has been sealed and abandoned (as indicated Section 724.100) or is operational and is to be used during mining and

reclamation operations (as indicated in Section 722.400). There are no hydrologic data from either well in the PAP.

Clarified in Section 724.100.

R645-301-731 The applicant should identify if any of the upper reaches of Lila Canyon and Little Park Wash are perennial or intermittent.

Added discussion to Section 724.200.

R645-301-724.100 - There are seasonal water-level measurements in the PAP for IPA-1, IPA-2, and IPA-3 for 1994, 1995, and 1996 but no measurements for 1997, 1998, or 1999.

Added discussion to Section 724.100.

R645-301-724.100, -724.200 - The 1997 quarterly samples from Redden Spring (RS-2), HC-1, HC-2 (B-1), and RF-1 were analyzed for all required parameters except total manganese.

Can't change. Information added to Appendix 7-2.

R645-301-724.100, -724.200 - The following data are briefly mentioned in Appendix 7-3; however, the actual data are not in the PAP, the results of the analyses are not discussed with the baseline information, and there is no reference to the source of these data:

- RS-1 and RS-2 (Redden Spring) were sampled once a year during 1978, 1979, and 1980 and analyzed for most major chemical constituents.

  Can't change. Additional analyses in Appendix 7-2. Discussed in Appendix 7-3.

- Springs H-6, H-18, and H-21 were sampled once and analyzed for the major constituents in 1985.

  Additional analyses in Appendix 7-2. Discussed in Appendix 7-3.

- Third quarter data for 1989 were collected for HC-1 and RF-1 and sampled for most of the parameters in UDOGM's guidelines.

  Additional analyses in Appendix 7-2. Discussed in Appendix 7-3.

- Between January 1981 and April 1983, baseline water quality data were collected for surface water and spring sites B-1 (HC-2), HC-1, RF-1 and RS-2 on the Horse Canyon permit area. Between 14 and 19 samples, depending on the site, were taken and analyzed during the monitoring period.

  Additional analyses in Appendix 7-2. Discussed in Appendix 7-3.

- The U.S. Geological Survey conducted a water quality study in Horse Canyon from August 1978 until September 1979. Samples were taken monthly from the Horse Canyon Creek and analyzed for most major ions and cations and field parameters. Metals, eight nitrogen species and other minor chemical constituents were taken on a quarterly basis or less.

  Additional analyses in Appendix 7-2. Discussed in Appendix 7-3.

R645-301-724.200 - There are no baseline data for the stream in Little Park Wash, the main drainage through the permit area. Little Park Wash is mentioned Sections 724.100 and 724.200 and in Tables 7-2 and 7-3 but is not further described or discussed.

Addressed in Section 724.200.

R645-301-724.200 - Range Creek drainage is mentioned in Section 724.100 but Range Creek is not further described or discussed. There are no baseline data.

Addressed in Section 724.200.

R645-301-724.200 - Flow and water-quality data for Horse Canyon Creek (HC-1, HC-2, and RF-1) from the Horse Canyon Mine 1997 Annual Report are in Appendix 7-2, and 1994 data for HC-2 are in Appendix 7-6. Additional data for Horse Canyon Creek are available from other annual reports of the Horse Canyon Mine and these data should be included and evaluated in the PAP.

Additional data added to Appendix 7-2.

R645-301-724.200, -728 - In the PHC the applicant finds that to date there is no known depletion of flow and quality of surveyed springs in the Horse Canyon permit area. The basis for this determination is not clear: in Section 724.100 (Page 13) of the PAP the applicant states that it is impossible to precisely describe the area's pre-mining hydrology.

Clarified in Appendix 7-3.

R645-301-724.200, -728 - In the PHC (Appendix 7-3) the applicant finds that, due to the close proximity and similarities of mining and drainage conditions, water quality and impacts to the channels from pumping the Lila Canyon Mine would be very similar to those experienced in the adjacent Horse Canyon Mine. However, the water-quality and downstream impacts that resulted from pumping the Horse Canyon Mine are not described or discussed adequately enough in the PAP for this comparison to be meaningful.

Data added to Appendix 7-2. Clarified in Appendix 7-3.

R645-301-724, -728 - In the PHC the applicant finds that, based on available data and expected mining conditions, the proposed mining and reclamation activity is not expected to proximately result in contamination, diminution or interruption of any underground or surface source of water within the proposed permit or adjacent areas; however, some subjects, such as acid-forming or toxic-forming materials, flooding or streamflow alteration, and ground water and surface water availability, that are not clearly covered in the PHC could use further clarification. Numerous technical deficiencies have been identified in the PAP. Additional information that will be provided to meet those deficiencies may necessitate revision or at least expansion of the PHC determination.

Data added to Appendix 7-2. Clarified in Appendix 7-3.

R645-301-731.210 - Two of the springs proposed for operational monitoring, L-6-G (Mont Spring) and L-7-G (Leslie Spring), correspond roughly with a group of springs monitored by JBR Consultants in 1985:

- The correlation between the JBR springs and L-6-G and L-7-G is not clear.
  Clarified in Section 731.211.

- Baseline data in the PAP for the JBR springs is not adequate (1994 and 1995 but nothing more recent).
  Can't change. See Section 731.211 for correlation.

R645-301-731.210 - Four of the springs proposed for operational monitoring are identified by the applicant as L-8-G (Cottonwood Spring), L-9-G, L-10-G (Pine Spring), and L-11-G and correspond with the springs monitored by EarthFax as 9, 10, 22, and 13A, respectively:

- Springs 9 and 10 have data from 1993, 1994, and 1995 but nothing more recent.
  Addressed in Section 731.211

- The PAP contains some data on field parameters from 1995 and 1993 for Springs 22 and 13A but no analysis reports: these two springs were usually observed to be dry from 1993 to 1995.
  Section 731.211.

R645-301-731.210, -731.220 - The parameters in Table 7-4 closely match those in Tech 004 except that dissolved iron and total alkalinity are not listed. Measuring total alkalinity is a necessary step in determining carbonate and bicarbonate so it is usually reported routinely by laboratories along with carbonate and bicarbonate, and it should be included by the applicant in Table 7-4.
Added to Tables 7-4 and 7-5. Tech 004 parameters used.

R645-301-731.210, -731.220 - Dissolved iron should be added to Table 7-4.
Added to Tables 7-4 and 7-5.

R645-301-731.210, -731.220 - Total manganese is listed in the body of Table 7-4 with a footnote that analysis will be done for dissolved manganese; this has the potential for causing confusion in the future and the two parameters should be specifically and separately listed in Table 7-4.
Added to Tables 7-4 and 7-5.

R645-301-731.210, -731.220 - Table 7-4 indicates that oil and grease is to be analyzed for in samples taken below the mine site only rather than at sites both above and below as recommended in Tech 004. A footnote indicates that this analysis will be done for designated samples. Oil-and-grease needs to be determined both above and below the mine site to be an effective water-quality indicator, and the sites at which it will be determined need to be clarified.
Added to Tables 7-4 and 7-5.

R645-301-731.210, -731.220 - Table 7-4 indicates that cation anion balance is to be determined only for surface-water samples taken below the mine site rather than at all locations: this is an important quality control measure and should be routine in all water-quality analyses.
Added to Tables 7-4 and 7-5.

R645-301-731.220 - No monitoring is proposed for Little Park Wash, which appears to be the major surface drainage in the permit area. The reasoning for not monitoring is not discussed in the PAP.

Added to Section 724.200.

R645-301-323, The application needs to contain maps showing the reference areas and vegetation communities in relation to the proposed surface facilities. The maps need to contain information as required in R645-301-140.

A map has been added to Appendix 3-2 showing reference areas and vegetation communities in relation to the proposed surface facilities.

R645-301-622.100, -722.300 - The location of S-32 is not shown on any map: it can be determined from the log in Appendix 6-1 that it is in T. 17 S., R. 15 E. but the Section cannot be identified because of the poor quality of the copy.

Location not known. Discussed in Section 724.100.

R645-301-624.100, -624.110 - Reference is made in several places in the Text to the Sunnyside fault, a feature that possibly controls ground-water flow and coal recovery, but this fault is not shown on the maps.

The Sunnyside fault is shown on Plates I-1, I-2, and II-2 of part "A". As was explained in the July 30, 1999 submittal on Page 28 of Chapter 6 and indicated on plate II-2, the Sunnyside fault is not expected to be found within the Lila Canyon Mine reserves. The Sunnyside fault has been added to Plates 6-1 and 6-2.

R645-301-623, -722, -731.521 - There is no cross section showing the relationship of the rock tunnels to geologic structure, stratigraphy, and ground water.

Added as Figure 7-1.

R645-301-624.100, -722.100 - Water-level elevation contours based on the three IPA wells are on Plate 7-1; otherwise, areal and vertical distribution of aquifers within the proposed permit or adjacent areas is not shown on maps and cross-sections. There are no cross sections showing location and extent of ground water and its relation to geologic structure and stratigraphy.

Shown on new Figure 7-1.

R645-301-722.100 - A water right for the Minerals Development Corporation (MDC) well is listed in Table 7-2. The MDC well and another well that is located nearer the Horse Canyon Mine surface facilities are discussed in Section 722.400. Both wells are shown on Plate 7-1 but they are not clearly identified.

Clarified on Plate 7-1.

R645-301-722.100, -722.300 - The ground-water elevation at the intersection of the Main slope and 3rd level in the Horse Canyon Mine, at the rotary car dump, is described in Section 724.100 (Page 14) in Chapter 7 as "representative of the potentiometric surface in the rest of the mine."; it was approximately 5,800 feet in 1986 and the applicant states that it probably has remained at this

level since operations ceased in the Horse Canyon Mine:

- The location is described in the Text but is not shown on Plate 7-1 or other maps.
  Location added to Plate 7-1.

- This "representative" ground-water elevation does not appear to have been used in projecting the piezometric surface mapped on Plate 7-1.
  Has now been used in projection on Plate 7-1.

R645-301-722.100 - Seasonal variations in water levels tabulated in Appendix 7-1 are not portrayed on cross sections or contour maps.
Not addressed - Asked to hold on this by Jim Smith.

R645-301-722.100 - Range Creek drainage is mentioned in the description of the ground-water divide of the main aquifer in Section 724.100 but Range Creek is not labeled on maps.
Addressed in Section 724.200

R645-301-722.200 -722.300 - Locations of all known seeps and springs are stated to be shown on Plate 7-1; however:

- Water quality and quantity data for springs or seeps 8B, 15A, 17B, 18A, 19C, HC-2, HC-4, HC-9, HC-11, HC-13, HC-14, HC-18, HCSW-1, and HCSW-3 are in Appendices 7-1 and data sheets for some are in Appendix 7-6, but their locations could not be found on Plate 7-1.
  Added to Plate 7-1.

- H-7, H-8, H-9, H-10, H-11, H-13, H-14, H-18, H-19, H-20, H-21, and H-22 are listed in Table 7-1 and data sheets for some are in Appendix 7-6, but their locations could not be found on Plate 7-1.
  Added to Plate 7-1.

- Water rights for several springs are listed in Table 7-2 and locations are on Plate 7-3. Some of the locations in Table 7-2 and on Plate 7-3 correspond roughly with springs shown on Plate 7-1, but they do not clearly correspond to springs on Plate 7-1: it is often unclear whether or not the two maps are showing the same spring.
  Correlated between Plates 7-1, 7-3, and Table 7-2.

- RS-2 (Redden Spring, water right 91-4959) is at the same location on Plates 7-3 and 7-4, but on Plate7-1 that location is labeled H-6 and RS-2 is farther west (RF-1 is also farther west on 7-1 than on 7-4).
  Clarified on Plates 7-1, 7-3 and 7-4.

- The star, large black-circle (IPA wells), and black-square symbols used on Plate 7-1 are

not explained in the Legend. The symbols for L-1-S through L-5-S are not explained in the Legend.

Corrected on Plate 7-1.

R645-301-724.100 - The applicant states that HC-1A is not on Plate 7-1 because no sample data or pertinent information are available; however, HC-1A is on Plate 7-1.

No change.

R645-301-722.200 -722.300 - Acknowledging that point-of-diversion locations such as those in Table 7-2 and on Plate 7-3 are often imprecise:

- The location of RS-2 (Redden Spring, water right 91-4959) on Plates 7-1, 7-3, and 7-4 (NE 3, T. 16 S., R. 14 E.) doesn't match that described in Table 7-2 (NW 3, T. 16 S., R. 14 E.).

  Location correlated on Plates 7-1, 7-3, 7-4 and Table 7-2.

- The location of Konna Spring on Plate 7-3 (NE 8, T. 16 S., R. 15 E.) does not match that given in Table 7-2 (SW 18, T. 16 S., R. 15 E.).

  Table 7-2. Corrected location and name - Kenna Spring.

- The location of Cottonwood Spring (L-8-G) on Plate 7-1 does not match that on Plate 7-3 and in Table 7-2.

  Location Correlated on Plates 7-1, 7-3, and Table 7-2.

R645-301-722 - Surface-elevation contours are displayed on several maps. On Plate 7-1 the 250-foot index contours were not printed, making it difficult to determine surface elevations.

Corrected on Plate 7-1.

R645-301-521.190, The Permittee must give the Division predisturbed, operational and reclamation contour maps that have a scale of not less than 1 inch equals 100 feet and has 2 foot contour intervals.

The existing 5' contour maps have the most detail that the current aerial photography will allow for. Two foot contour maps do not currently exist and cannot be created from the existing photography. When the detailed engineering is complete the detailed contour maps will be included in Appendix 5-4.

R645-301-521.190, The Permittee must give the Division copies of the aerial photographs that show the predisturbed area. If the Division were to reclaim the site, those photographs would be helpful in restoring the area.

UEI does not have a copy of the 1985 photography but a copy may be obtained by DOGM from Olympus Aerial Survey. Aerial photographs are not available form UEI.

OPERATION PLAN

R645-301-121.200, On Page 33, Section 523 the word cjould should be spelled could.

Cjould has been changed to could on Page 33 of Section 523.

R645-301-121.200, On Page 68, Section 528.320 the Permittee states that coal mine waste will be place in new or existing disposal areas. The Permittee must either identify all existing coal mine waste disposal areas or change the wording. At present there are not existing disposal areas in the permitted area.

There are no existing disposal areas in the permitted area. The Text in section 528.320 has been changed to remove the reference to existing coal mine waste disposal areas.

R645-301-521.190, The Permittee must state the maximum amount of coal that will be stored on site.

Plates 5-2 & 5-8 show the areas of coal storage. The dimensions of the coal storage pile are shown on Plates 5-2 &5-8 submitted on July 30, 1999. After discussions with Wayne Western it was determined that the above was adequate.

R645-301-536, The Permittee must give the Division detailed plans for the refuse disposal areas where the material from the rock tunnels will be placed.

All refuse and rock slope material will be disposed of in the area designated for rock slope and refuse disposal. Detailed plans for the refuse disposal area has been added to Appendix 5-7.

R645-301-526.133 and R645-301-526.116, The Permittee must show how the public will be protected from mining and reclamation activities that are constructed within 100 feet of the county road. Specifically the Permittee must address how the public will be protected from the hazards associated with the sediment pond and other mine facilities.

The Road MOU with Emery County has been added to Appendix 1-4.

R645-301-121.200, The Permittee must either include the letter from Emery County stating that they have approved the construction of the mine facilities next to the county road or remove the reference.

The Road MOU with Emery County has been added to Appendix 1-4.

R645-301-420, The Text of the application needs to show the applicant has submitted a Notice of Intent with the Division of Air Quality and that Air Quality has issued its Intent to Approve. Contrary to the application, Appendix 4-3 does not contain a copy of the Air Quality Permit (or Approval Order).

Both the Notice of Intent and the Intent to Approve were submitted on July 30, 1999. A copy of the Approval Order has been added to Appendix 4-3.

R645-301-522 and R645-301-525.240, The Permittee must give the Division a detailed coal recovery plan. That plan must include the coal extraction ratios and the calculations for the longwall areas, full extraction room-and-pillar areas and first mining only areas.

The R2P2 contains details of the coal recover plan. Section 522 Page 32 was changed to

reference the R2P2 for additional details for coal recovery.

R645-301-332, Section 525.100 indicates there are no renewable resource lands within the proposed addition to the permit area; however, according to the definition of renewable resource lands and information in the land use Chapter of the application, the proposed addition to the permit area does include renewable resource lands.

The Text in Section 525.100 has been changed to reflect limited renewable resource lands found within the permit area.

R645-301-332, The applicant needs to show how the effects of underground mining on vegetation will be monitored.

Text in Section 332 Page 15 discusses the effects of underground mining on vegetation and how it will be monitored.

R645-301-121.200, The Permittee must use a standard angle of draw for subsidence calculation of justify why different angles of draw are used. On Page 32, of the PAP Section 522 the Permittee states that the width of the escarpment barrier will be determined by implementing a 20° angle of draw. On Plate 5-5 the Permittee states that a 21.5° angle of draw was used to find the maximum extent of subsidence.

On Page 32 of the PAP Section 522 was changed to implement a 21.5^0 angle of draw.

R645-301-121.200 , The Permittee must state why a buffer zone of 200 feet was used to protect the escarpments from subsidence.

The R2P2 on Page 4-2 specifies a 200' outcrop barrier. Section 525.453 refers to the R2P2..

R645-301-525.490 and R645-301-525.440, The Permittee must show on Plate 5-5 or other similar maps those surface structures such as seeps and springs and eagle nests. that need to be protected from subsidence.

Eagle nests have been added to the new Plate 5-3. State appropriated water rights within the potential influence of subsidence have been added to the new Plate 5-3. However, neither seeps and springs nor State appropriated water rights need protecting. See Plate 7-1 for the locations of seeps and springs. There are no plans to change or modify the mining plan to protect any springs or seeps. Springs with water rights will be monitored for flow and quality as described in Chapter 7 Section 731.211. UEI has committed to provided for mitigation of any lost water rights as per Chapter 7 Section 727.

R645-301-525.100, The Permittee must provide the Division with a map of the permit area at a scale of 1:12,000 or larger that shows the areas where subsidence could occur.

Plate 5-5 shows the area of maximum potential subsidence. It is generally accepted that the area within the maximum potential subsidence line is the area where subsidence could occur. The scale bar on Plate 5-5 has been corrected. After discussions with Wayne Western it was determined that Plate 5-5 fulfills this portion of the law.

R645-301-525.440, The Permittee does not give details of the subsidence monitoring plan. The only information about the plan is that it will involve ground and aerial surveys. The Division needs more details about the subsidence monitoring plan before it can be evaluated. The additional information must include but not be limited to the location of all subsidence monitoring points on the subsidence maps (Plate 5-5).

Section 525.440 discusses the subsidence monitoring plan. Plate 5-3 will show the subsidence monitoring locations once determined by the Aerial Survey Company.

R645-301-525.120, The Permittee must describe the potential damage to State-appropriated water rights. Since the Division has received comment from water users about the potential for damage to water rights the Permittee must address this issue. The Permittee must also describe the potential subsidence effects on the eagle nests.

The PHC (Appendix 7-3) addresses the probably hydrologic effects of subsidence on State-appropriated water rights. The potential subsidence effects on eagle nests is discussed in Section 322.220 Page 11.

R645-301-121.200, The word "extend" must be replaced with "extent" in Section 525.160 of the MRP.

Section 525.160 has been replaced with Section 525.510 and the word "extend" has been replaced with the word "extent"

R645-301-121.200, Reference to a ground survey being needed to verify subsidence damage in Sections 525.160 and 525.321 must be removed from the Text. The Permittee is responsible for any subsidence damage whether or not they conduct a ground survey. For example if subsidence was suspected of damaging a spring a ground survey may not be the proper method to verify the claim.

Section 525.160 has been replaced with Section 525.510 and the reference to ground survey has been removed from the Text. Section 525.321 does not exist in the regulations.

R645-301-121.300, The Permittee must submit the subsidence information in the format required by the Division. The format used by the Permittee in the subsidence section of the amendment does not correspond to the format in the Utah Coal Rules Revised May 1, 1988. The May 1, 1988 rules were superseded by the November 1, 1996 rules.

Section 525 (Subsidence) of the plan has been rewritten to fit the new format (May 1, 1998) that became effective after the original Section 525 was written.

For example the November 1, 1996 do not have sections R645-301-525.131, R645-301-525.132, R645-301-525.133, R645-301-525.134, R645-301-525.140, R645-301-525.150, R645-301-525.160, R645-301-525.170 while the PAP does.

Section 525 (Subsidence) of the plan has been rewritten to fit the new format (May 1, 1998) that became effective after the original Section 525 was written.

Section 525.200 of the PAP discusses subsidence control, while Section R645-301-525.200 of the November 1, 1996 rules deals with protected areas. Section 525.300 of the PAP discusses notification of surface owners, while Section R645-301-525.300 of the

November 1, 1996 rules deals with subsidence control.
Section 525 (Subsidence) of the plan has been rewritten to fit the new format (May 1, 1998) that became effective after the original Section 525 was written.

The PAP does not address Sections R645-301-525.400, R645-301-525.460, R645-301-525.470, R645-301-525.480, R645-301-525.490, R645-301-525.500, R645-301-525.540, R645-301-525.550, R645-301-525.600, and R645-301-525.700,
Section 525 (Subsidence) of the plan has been rewritten to fit the new format (May 1, 1998) that became effective after the original Section 525 was written.

Note: The Division will supply the Permittee with a hard or electronic copy of the current Utah Coal Rules upon request. The Permittee can get a current electronic copy of the Utah Coal Rules at http://161.119.62.173/mining/rulecoal.htm or visit the Division's homepage at http://dogm.nr.state.ut.us/
Section 525 (Subsidence) of the plan has been rewritten to fit the new format (May 1, 1998) that became effective after the original Section 525 was written.

R645-301-332,Section 525.100, There are no renewable resource lands within the proposed addition to the permit area; however, according to the definition of renewable resource lands and information in the land use Chapter of the application, the proposed addition to the permit area does include renewable resource lands. The Permittee must state that renewable resources are located in the permit area.

The Text in Section 525.100 has been changed to reflect limited renewable resource lands found within the permit area.

R645-301-332, The applicant needs to show how the effects of underground mining on vegetation will be monitored.

Text in Section 332 Page 15 discusses the effects of underground mining on vegetation and how it will be monitored.

R645-301-333, In Section 333, the application says the major impacts to wildlife in and around the mine will be the loss of habitat during construction. It also says most wildlife will either accept the mine or adjust behavior to coexist with the operation. These statements need to be modified since the major impacts on wildlife from the mine will be associated with operations.

Text in Section 333 Page 17 has been modified to discuss the impact on wildlife during operations.

R645-301-333, The wildlife education program needs to specifically include instructions to remove wildlife carcasses well off the road to avoid collisions with scavenging raptors.

Text in Section 333 Page 18 has been modified to discuss the removal of road kill from the roads.

R645-301-333, The applicant needs to make a definitive commitment regarding firearm and off road

vehicle use in its area of control.

Text in Section 333 & 333.200 Pages 18 & 19 has been modified to discuss the use of off road vehicles and firearms.

R645-301-333, The Division of Wildlife Resources commented there are bighorn sheep that spend the entire year in Lila Canyon, and the mine will adversely affect these animals. In addition, the area is heavily used by chukars, and this use would also be negatively affected. The applicant needs to show how it will mitigate for effects on critical big game and other habitat and show how negative effects will be minimized. Wildlife Resources suggests the applicant install at least one artificial watering device, such as a guzzler, to benefit chukars in the area.

Text in Section 333 Page 18 has been modified to discuss mitigation for critical big game and upland game.

R645-301-333, The applicant has committed to consult with the Fish and Wildlife Service and Division of Wildlife Resources concerning the eagle nests near the proposed facilities. The application needs to contain the results of this consultation, including protection and mitigation plans.

Consultation with Fish and Wildife Service and Division of Wildlife Resources is discussed in Section 322.220 Page 11.

R645-301-333, The application says a raptor inventory will be conducted to ensure that no bald or golden eagles or adversely affected by mining, but this statement needs to apply to all raptors.

Text in section 322.220 Page 11 was changed to include all Raptors.

R645-301-333, The applicant has committed to not subside escarpments that contain eagle nests, but it appears the area near at least one nest would be subsided. The applicant needs to show how nests in the subsidence areas would be protected. Additionally, it is very difficult using the maps in the application to determine where nests are located in relation to the proposed mining activities, but this problem is addressed under R645-301-32 n this review.

Changes have been made to Plate 3-1 which should make the locations of the nests clearer In addition Plate 5-3 was added .

R645-301-232.100 through R645-301-232.500, The total volume of soil needed for reclamation (131,667 cubic yards) will require salvaging and protecting most of the available topsoil and rooting-depth subsoil resources within the disturbed area as identified in the Order 1 soil survey. All topsoil and rooting-depth subsoil resources must be protected and/or preserved for reclamation. Topsoil and rooting-depth subsoils may not be mixed or contaminated with unsuitable soil materials containing excess rock or Mancoes shales.

Chapter 2 Text and maps have been changed to reflect the topsoil being recovered down *to the Mancos or 18" which ever is less. The new topsoil volume to be reclaimed and stored will be approximately 60,000 loose cubic yards.*

R645-301-333, Identify what measures will be made during the life of the mine to protect the island of undisturbed topsoil resources from mining related impacts, such as blowing coal fines, vehicle traffic, and other uses that would disturb and/or otherwise negatively impact these undisturbed

areas and topsoil resources.

Section 333.200 Page 20 discusses the topsoil protection.

R645-301-232.700 and R645-301-232.710, Identify specific areas inaccessible for construction machinery where soils can not be salvaged due to adverse, unsafe or impractical conditions. All soils must be salvaged on steep slopes and/or rocky areas accessible to construction machinery for the purpose of constructing cut slopes or grading flat areas.

Chapter 2 Text Section 232.710 address an area that is inaccessible for construction machinery where soils can not be salvaged. In areas where topsoil cannot be reclaimed Jersey Barriers will be installed to protect the topsoil from the ROM coal stockpile.

R645-301-120 and R645-301-140, Clearly identify, locate, and present where cut and fill slopes will occur as described in the Text. Provide a cut and fill contour map correlated with discussions from both the operations and reclamation sections.

References to cut and fill slopes have been removed from the Text.

R645-301-231.100 through R645-301-232.300, and R645-301-234.100 through R645-301-234.240, Section 232.100 states that boulders of approximately three feet in diameter and larger will be separated from the topsoil and piled or placed at appropriate locations. The following need clarification in the PAP:

- Designate a "topsoil" rock stockpile on maps where salvaged rock will be stored for reclamation use, and sign these piles accordingly during the life of the mine.
  The Text in sections 232.100 and 242.100 describe how boulders will be handled. Rocks of less than 36" will be stored with the topsoil. Rocks greater than 36" will be pushed aside or stored in a convenient location.

- Or, include rock with soil salvage and store with soil in topsoil stockpile.
  The Text in sections 232.100 and 242.100 describe how boulders will be handled. Rocks of less than 36" will be stored with the topsoil. Rocks greater than 36" will be pushed aside or stored in a convenient location.

R645-301-100 (Underground Development Waste, Coal Mine Waste, Refuse Pile), R645-301-528.200 through R645-301-528.322, and R645-301-536 through R645-301-536.900, Identify the rock-slope waste material as Underground Development Waste. Place and properly dispose of all Underground Development Waste in a Refuse Pile. If Underground Development Waste is used as pad fill, then the pad fill must meet the permit requirements for an approved disposal area.

Text has been changed to reflect that the rock slope material has been identified as Underground Development Waste and will be disposed of in the rock slope and refuse area identified on Plate 5-2.

R645-301-553.252, The PAP states that the refuse pile will be covered with 24 inches of soil. Correct the PAP so that the refuse pile, upon final grading is covered with a minimum of four feet of the **best available**, nontoxic and noncombustible material.

Appendix 5-7 states that the rock-slope waste and refuse pile will be covered with a minimum of four feet of nontoxic and noncombustible material. The material will be removed from under where the pile will be located then placed back over the top of the pile.

R645-301-553.252 and R645-301-233, Section 232.500 and Appendix 5-7 state subsoil will be removed from RBL area to minimum depth of 24 inches. The Order 1 soil survey, test pit LC10, shows that topsoil cover is approximately 6 to 8 inches and that immediate subsoils 6 inches and greater in depth contain 65 to 80 percent Mancos shale fragments. Only suitable topsoil and subsoil may be salvaged and used for reclamation; Mancos has not been approved for salvage.

Chapter 2 Text and maps have been changed to reflect the topsoil being recovered down to the Mancos or 18" which ever is less.

R645-301-234.220 through R645-301-234.230, The application states that the topsoil stockpile will be located and protected to avoid contamination and unacceptable compaction. The plan further states that the slopes will have an irregular, pitted surface or contour furrows to help retain precipitation and minimize runoff. The following are needed:

- Soil scrappers have been shown to induce soil compaction. State how compaction will be alleviated.
  The plan does not state that scrappers will be used. See Section 231.100

- Section 234.230 states that surface roughening will consist of contour furrows and constructing an irregular, pitted surface. These two practices are not compatible; commit to using one or the other exclusively. If contour furrows are used, engineer furrow placement, slope, and size to control erosion; provide contour furrow design, maps, and cross sections.
  The Text in Chapter 2 has been changed to remove reference to contour furrows. Irregular, pitted surface will be accomplished by Pocking.

R645-301-234.200 through R645-301-234.240, R645-301-521.160, R645-301-521.165, Additional information is needed concerning soil stockpile pile size and dimensions.

- Topsoil Stockpile - Size the topsoil to store the 41,893 CY of topsoil as identified in the PAP.
  The Text in Chapter 2 has been changed to reflect the new topsoil volume to be reclaimed and stored which will be approximately 60,000 loose cubic yards.

- Subsoil Stockpile - Size the subsoil pile to store the additional 89,774 CY of subsoil as identified in the PAP. Provide the location and placement of the subsoil stockpile.
  No additional subsoil other than the 18" of topsoil will be reclaimed or stockpiled.

- Stockpiles - Provide engineered drawings of projected stockpiles, showing size, exact placement, final configuration and cross sections of each stockpile. Details are needed for

the following stockpiles:

- topsoil stockpile,
- subsoil stockpile, and
- "topsoil" rock (boulders and large stones) stockpile.

The size and configuration of the topsoil stockpile can be determined from Figure 1 in Chapter 2.
The placement of the stock pile is shown on Plate 5-2
No subsoil stockpile is required.
No "topsoil" rock (boulders and large stones) stockpiles are required.

R645-301-331, The applicant needs to clarify the use of the terms affected area and disturbed area. Also, the discussion in the second paragraph of Section 331 about how much land might be available for wildlife use is confusing and may be unnecessary.

References to affected area in Section 331 has been removed

R645-301-724.400, The application contains conflicting precipitation information, and this needs to be resolved.

Addressed in Section 724.400.

R645-301-331, Grasses or forbs only would be seeded for interim revegetation, but the broadleaf forbs would not provide adequate erosion protection and the seeding rate is minimal for the grasses alone. Both should be used together, and the Division recommends certain changes to the seeding rates and species being seeded.

The approved seed mix can be found in Table 3.4/3.5.

R645-301-527.200, The Permittee must give the Division the cross sections that were used in the embankment stability analysis and also state why the assumption used in the Hoek method were valid. The assumption used in the construction of the charts area:

The cross sections used in the embankment stability analysis can be found in Appendix 5-5 as Figures 1,2,&3.

- The material forming the slope is assumed to be homogeneous
- The shear strength of the material is characterized by a cohesion c and a friction angle φ.
- Failure is assumed to occur on a circular failure surface which passes through the toe of the slope.
- A vertical tension crack is assumed to occur in the upper surface of the slope.
- The location of the tension crack is assumed and of the failure surface are such that the factor of safety of the slope is a minimum for the slope geometry and groundwater conditions considered.

The following assumptions are discussed in Appendix 5-5.

The material forming the slope is assumed to be homogeneous
The shear strength of the material is characterized by a cohesion c and a friction angle φ.
Failure is assumed to occur on a circular failure surface which passes through

the toe of the slope.
A vertical tension crack is assumed to occur in the upper surface of in the face of the slope.
The location of the tension crack is assumed and of the failure surface are such that the factor of safety of the slope is a minimum for the slope geometry and groundwater conditions considered.

R645-301-527.200, The Permittee must give the Division plans for each surface conveyor.

After discussion with Wayne Western it was determined that Plate 5-8 satisfied this requirement.

R645-301-527 and R645-301-534, The Permittee must give the Division certified plans and drawings for the roads in the Lila Canyon area. The plans are drawing in Appendix 5-4 are not certified. In addition, the plans and drawings must contain the following information:

Include a map, appropriate cross sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, low-water crossings, and drainage structures;

Cross sections that are typical for the roads can be found in Appendix 5-4 and 5-5, and the locations of the cross sections can be found on Plate 5-2. Additional information will be included in Appendix 5-4 once the detailed engineering design has been completed.

Describe the plans to remove and reclaim each road that would not be retained under an approved postmining land use, and the schedule for this removal and reclamation.

Reclamation plans are discussed in Section 542.600.

R645-301-528.320, The Permittee must identify all existing disposal areas were coal mine waste will be disposed. If no existing disposal areas exist then the Permittee must remove the reference to existing disposal areas from the PAP.

There are no existing disposal areas in the permitted area. The Text in section 528.320 has been changed to remove the reference to existing coal mine waste disposal areas.

R645-301-528.320 and R645-301-536, The Permittee must place all rock material from the rock slopes into approved disposal areas. If the Permittee wants to use the material from the rock tunnels as fill material for the pad then the Permittee must permit the area as a refuse pile.

Text has been changed to reflect that the rock slope material has been identified as Underground Development Waste and will be disposed of in the rock slope and refuse area identified on Plate 5-2.

R645-301-553.252, The Permittee must either commit to cover the refuse pile with 4 feet of material or demonstrate to the Division that a lesser amount is needed.

Appendix 5-7 states that the rock-slope waste and refuse pile will be covered with a minimum of four feet of nontoxic and noncombustible material. The material will be

removed from under where the pile will be located then placed back over the top of the pile

R645-301-536.100, The designs for the refuse pile must include the detailed cross sections that were used for stability analysis. The detailed cross section and failure surface are needed to verify that the assumptions used to determine the safety factor are valid.

The refuse pile is totally incised therefore a stability analysis is not needed.. The cross sections for rock slope and refuse disposal area can be found in Appendix 5-7.

R645-301-731.521 - The numbers provided in the PAP indicate ground-water levels would need to rise approximately 150 feet just to reach the starting elevation of the tunnels (from 6,000 feet to 6,150 feet) and 300 feet to reach the intersection of the tunnels with the coal seam (from 6,000 feet to 6,300 feet). The applicant states Section 731.521 that the water level in the mine would need to rise approximately 20 feet to reach the contact of the rock slope with the coal seam and produce a gravity discharge through the tunnels: it is not clear what this means.

Typo - Corrected in Section 731.521.

R645-301-731.210 - It is not clear from the PAP how long baseline monitoring will be continued and when operational ground- and surface-water monitoring will begin.

Clarified in Section 731.200.

R645-301-533.700, The Permittee must label the contour lines on Plate 7-6. The Permittee must also show the correct location of the emergency spillway on the contour maps. The elevation of the emergency spillway is shown between 5839 and 5841 feet on Plate 7-6. The table shows the elevation to be 5841 feet.

Revised Plate 7-6.

R645-301-533.100, The Permittee must give the Division the detailed cross sections that were used in the slope stability analysis. Those cross sections are needed

Slope stability cross sections are included in Appendix 5-5 as Figures 1,2,&3.

R645-301-533.210, The Permittee give the Division the physical and engineering properties of the sediment pond foundations.

Engineering and physical properties of the sediment pond foundations can be found Appendix 7-4

R645-301-533.300, The Permittee must show how the pond will be protected against sudden drawdown. Specifically the Permittee must show that pore pressure in the embankments will not cause the pond to fail should a sudden drawdown occur.

Sudden drawdown is discussed in Appendix 5-5. The proposed sediment pond design has been approved by the State Engineer (see Appendix 7-4)

R645-301-521.190, The Permittee must provide the Division with a copy of the letter from the State Engineer stating that the sediment pond design has been approved.

A copy of the letter from the State Engineer approving the sediment pond design has been added to Appendix 7-4.

R645-301-731 The applicant should size the undisturbed drainage culvert in Lila Canyon to account for floods, debris, sediment load and overflow from sedimentation pond. The sizing calculations should incorporate a curve number value from antecedent moisture condition III, since the culvert will be used during reclamation and visited infrequently.

Addressed in Appendix 7-4 (Reclamation Hydrology).

R645-301-222 The applicant should submit contingency plan to treat groundwater in the event contaminated groundwater is contacted in volumes that have to be discharged from the mine.

Added to Appendix 7-3.

R645-301-752 The applicant should commit to evaluating channel morphology parameters and erosion impacts if mine water should be discharged into Lila Canyon.

Added to Appendix 7-3 and Section 728.332.

R645-301-528.100, The Permittee must show the coal storage areas on the surface facilities maps. The Permittee will only be allowed to store coal in those coal storage areas outlined on the surface facilities map. The Permittee must also label the coal loading and transportation areas.

After discussions with Wayne Western it was determined that Plate 5-8 satisfies this requirement.

R645-301-525.490, The Permittee must show on Plate 5-5 or other similar maps those areas where subsidence control methods (first mining only) will be used to protect surface structures such as escarpments, seeps and springs and eagle nests.

Plate 5-3 shows where first mining only will be used to protect escarpments and eagle nests. Plate 5-3 also shows the locations of State appropriated water rights. There are no plans to change or modify the mining plan to protect any springs or seeps. Springs with water rights will be monitored for flow and quality as described in Chapter 7 Section 731.211. UEI has committed to provided for mitigation of any lost water rights as per Chapter 7 Section 727.

R645-301-525.100, The Permittee must provide the Division with a map of the permit area at a scale of 1:12,000 or larger that shows the areas where subsidence could occur.

Plate 5-3 has a scale of 1:12,000 and shows the limit of potential subsidence

R645-301-527 and R645-301-534, The Permittee must provide the Division with certified plans and drawings for the roads in the Lila Canyon area. The plans and drawings must contain the following information:

Include a map, appropriate cross-sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, low-water crossings, and drainage structures.

Road plans and drawings can be found on Plate 5-2 and Appendices 5-4 and 5-5. Additional information will be included in Appendix 5-4 once the detailed engineering design has been completed.

RECLAMATION PLAN

R645-301-537.200, The Permittee states in Section 537.200 of the PAP that material from the rock slopes will be left in place during final reclamation as settled and revegetated fill. The settled and revegetated fill regulation deal with materials placed before the enactment of SMCRA. Since the site is undisturbed, the Division will not allow the Permittee to leave settled and revegetated will in place if that material does not meet AOC requirements.

Section 537.200 has been rewritten to reflect that the rock slope material will be placed in the refuse pile which is incised.

R645-301-553.120, In Section 553.120, The Permittee states that all highwalls will be eliminated. However, the Permittee did not give the Division detailed maps and cross sections of the portal areas. Without that information the Division cannot make a finding about the adequacy of the highwall elimination plan. The Division needs a cross section of profile of each portal. The portals must be identified on the cross sections.

Section 553 has been rewritten to reflect that no highwall will be created. The portals are going in at the base of a natural occurring cliff face.

R645-301-553.130, In Section 553.130, The Permittee states that all reclaimed slopes will have a static safety factor of at least 1.3. The Permittee did not provide the slope stability analysis that supports the 1.3 safety factor claims.

The reclaimed slope stability analysis was added to Appendix 5-5.

R645-301-553.300, In Section 553.300, The Permittee states that all coal seams and/or combustible material will be adequately covered to prevent spontaneous combustion. However, the Permittee does not state what or where that material is located. The Permittee must clarify the statements about covering coal seams and other combustible materials.

The Text in Section 553.300 has been changed to reflect that no coal seams will be exposed during construction.

R645-301-553.400 and R645-301-121.200, The Permittee states, in Section 553.410 of the PAP, that cut and fill terraces may be used to reclaim the mine portal pads. The Permittee then states in Section 553.420 that no terraces will bed used. The Permittee needs to present consistent information.

The Text in Section 553.410 was changed to reflect that cut and fill terraces were not required..

R645-301-553.230, The Permittee states that all recontoured areas will be compacted to reduce soil slippage and the have 3 inches of topsoil placed. After the topsoil is placed, the soil will be ripped on the contour. The Permittee must explain how areas with slopes to steep to allow equipment to operate on the contour will have topsoil placed.

The Text in Section 553.230 was changed. The reference to contour ripping has been removed.

R645-301-120, The following items are needed to help add clarity and eliminate discrepancies in the plan:

- The location of cut and fill slopes is not clear. Please provide a cut and fill contour map to correlate with the discussion concerning backfilling cut slopes from adjacent pad areas.
  References to cut and fill slopes have been removed from the Text.

- Clarify which adjacent pad areas (located within the disturbed area) will be used as work platforms for backfilling cut slopes and newly exposed hillsides.
  References to cut and fill slopes have been removed from the Text.

- The statement that the adjacent reclamation pad area will be reclaimed in corresponding lifts is unclear since the pad is being removed, not built up.
  References to cut and fill slopes have been removed from the Text.

R645-301-242, R645-301-244, Clarify and describe soil redistribution, placement, and stabilization:

- Describe whether Pocking will occur before or after topsoil placement. Describe the density of pock placement on the soil surface.
  Text in Chapter 2 has been changed to reflect Pocking after topsoil replacement.

- Describe methods for minimizing and alleviating fill and replaced subsoil and topsoil compaction.
  Section 242 discusses how the fill and topsoil will be handled.

- Describe methods for reducing soil slippage between the fill and soil interface.
  The Text has been changed in Section 241 to reflect scarifying by ripping the fill soil contact.

- Describe how stockpiled "topsoil" rock (boulders and large stones) will be placed on the surface and reincorporated with the redistributed topsoil.
  Text in Section 242.100 describes how the bolders and large stones more than 36" will be reincorporated.

- Correct the plan to indicate surface preparation practices that are compatible with the rocky soil and surfaces, and that are consistent with other reclamation practices (e.g., pocking). Drilling, discing or raking are not compatible with extreme rocky soils, rocky surfaces, or with surfaces that have been deep gouged or pocked.
  The Text in Chapter 2 has been changed so that no reference to drilling, discing or raking is made. The disturbed area will be Hydromulched.

R645-301-130, Section 231.300 and 243 are not in complete agreement on topsoil sampling procedures. Sections 231.300 and 243 refers to topsoil field sampling and testing. Please ensure that all sampling, testing and result interpretation is done by a qualified soil scientist. The soil scientist must be qualified to sample, test and interpret data results. Prior to sampling and testing of the

topsoil material, the soil scientist's qualifications must be reviewed by the Division.

The Text in Chapter 2 has been changed to so that topsoil sampling procedures are in agreement.As per Section 243 sampling will either be performed by a Certified Soil Scientist or by a person who is determined qualified by the operator and the Division.

R642-742.312 The applicant should discuss how the large undisturbed culvert will be reclaimed and how much will be left in-place to provide for flows under the roadway.

Addressed in Appendix 7-4 (Reclamation Hydrology) and Plate 7-6.

R645-742.312 All reclaimed channels or other hydrologic structures should be designed using Antecedent Moisture Condition III, which yields a higher Curve Number value to ensure maximum protection of hydrologic features while unattended.

Addressed in Appendix 7-4 (Reclamation Hydrology).

R645-301-341.100, The applicant needs to clarify the reclamation timetable in Table 3-3. There are terms used in this schedule that are not explained elsewhere in the application. Also, it is not clear where and in what sequence seeding and mulching listed for September 1, 2025, and September 30, 2025, would occur.

Table 3-3 Page 16 has been corrected.

R645-301-341.110, R645-301-354, Table 3-3 indicates seeding and mulching could begin as early as September 1. Seeding of most species should be delayed until as late in the fall as possible, preferably until November. Seeding of warm season grasses should be done in the summer.

Table 3-3 Page 16 has been corrected.

R645-301-341, The applicant needs to show how sufficient quantities of soil will be salvaged and redistributed to allow achievement of the revegetation performance standards. The Division finds specifically that it is necessary to remove, stockpile, and redistribute subsoil to achieve revegetation success, and the plan proposed by the applicant would not allow for adequate vegetation establishment. Some of the deeper subsoils, below the roots, have very high rock contents, and some are derived from marine shales that could severely limit vegetation establishment and growth. If these materials were in the main rooting zone, it would be difficult or impossible to achieve revegetation success.

Chapter 2 has been rewritten to reflect that 18" of soil or down to the Mancos, which ever is less, will be treated as topsoil and recovered and stored in the topsoil stock pile.

R645-301-341, Areas of coal mine waste disposal need to be covered with at least four feet of the best available nontoxic, noncombustible material to achieve revegetation in accordance with the R645-301-350 performance standards.

The slope rock & refuse storage area will be covered with 4' of cover. See Chapter 2 Section 220 for details.

R645-301-341, Section 341.220 says tillage will continue until the size of the average soil clods on the surface is less than one inch. This is likely to unnecessarily compact the soil, and it reduces soil structure. It may be necessary to break up the largest clods, but continuing to till the soil until soil

clods are less than one inch diameter is not necessary or desirable in this kind of site.

Text in Section 341.220 has been changed.

R645-301-341, The applicant needs to resolve inconsistencies in the reclamation methods shown in Section 341.220, Chapter 2, and Appendix 5-8. According to Section 341.220, the surface will be covered with 2000 pounds per acre of alfalfa or native grass hay which is crimp-disced into the soil, but this is not mentioned in Appendix 5-8. Appendix 5-8 and Chapter 2 discuss gouging but Section 341.220 does not.

The Text has been modified in Section 341.220 Page 22.

R645-301-341, The Division considers water harvesting, such as gouging, to be an essential component of reclamation at this site. Any reclamation methods inconsistent with leaving a rough surface need to be modified or eliminated. In Appendix 5-8, the applicant commits to gouging the site, and crimp discing mulch and drill seeding are likely to reduce the gouges so they will not be as effective as they need to be.

After discussions with Paul Baker it was determined that this section was adequate. See Appendix 5-8 for Pocking details.

R645-301-341, The application gives an approximate size for gouges, but the size shown is the minimum that should be used. The application should specify that the size shown will be the minimum size used.

After discussions with Paul Baker it was determined that this section was adequate.

R645-301-341, Assuming gouging will be the water harvesting method used, the applicant needs to describe how the gouges will be placed.

See Appendix 5-8 for details of gouging.

R645-301-341.210, Blue grama is an important warm season grass in the proposed disturbed area, and it needs to be included in the seed mix for final reclamation. Bluebunch wheatgrass is approximately an ecological equivalent of Salina wild rye, the dominant grass at the site. It should also be included in the seed mix.

The approved seed mix can be found in Table 3.4/3.5.

R645-301-341.250, The proposed seed mixture includes introduced species that may not be desirable and necessary for achieving the postmining land use. The applicant needs to either eliminate these species from the seed mix or justify using them.

The approved seed mix can be found in Table 3.4/3.5.

R645-301-341.210, The seeding rate shown in Table 3-4 is excessive. The *Interagency Forage and Conservation Planting Guide for Utah* recommends a broadcast seeding rate of 50-100 seeds per square foot.

The approved seed mix can be found in Table 3.4/3.5.

R645-301-341.230, The application does not say what mulching method or rate will be used in accessible

areas. It also does not say at what rate the straw mulch would be applied. If an area is inaccessible and would have straw applied, it would also be inaccessible to equipment needed to crimp the straw. The applicant needs to clarify the mulching methods and rates.

Section 341-230 Page 26 discusses mulching method or rate in accessible and inaccessible areas.

R645-301-341, The application says in Section 357.301 the Lila Canyon Mine would like to reserve the right to apply for augmentation of reclaimed areas without jeopardizing or extending the bond liability period on a site specific case scenario. Augmented seeding is not allowed without lengthening the extended liability period; therefore, the statement in 357.301 must be modified.

Section 357.301 Page 36 was modified to discuss bond liability period and augmented seeding.

R645-301-341.250, The application says the reference area for the mine site disturbance was established adjacent to the existing facilities during the summer of 1985. It appears this statement is referring to the current Horse Canyon mining and reclamation plan. If the applicant intends to use the reference area at the Horse Canyon Mine, the application needs to include all pertinent data to compare the reference area with the proposed disturbed area.

Text in Section 341.250 Page 27 was modified to reflect the 1999 inventory.

R645-301.341.250, As discussed in the "Vegetation Resource Information" section of this analysis, there is inadequate information to determine whether the reference areas shown in Appendix 3-2 can be approved as success standards for vegetation cover or other vegetation parameters.

Appendix 3-2 has been rewritten to reflect the new vegetation inventory.

R645-301-341.250, The applicant needs to propose methods for measuring diversity, seasonality, and erosion control, and success standards for these parameters.

Methods for measuring diversity, seasonality, and erosion control can be found in Section 341.250 Page 27.

R645-301-341.250, The applicant needs to include the woody plant density success standard of 1500 per acre established in consultation between the Division and the Division of Wildlife Resources.

Section 357.312 Page 37 has been modified to reflect woody plant density success standards.

R645-301-342, In Section 342, the application says the sediment pond will be maintained through the life of the operation and bond liability period at which time it will be allowed to pass through normal pond succession until such time as the pond will be removed when effluent criteria are met at about year six following reclamation. This statement contradicts itself and other parts of the application and needs to be modified. The applicant needs to clarify how long the pond will be allowed to remain and what maintenance will be done. To leave the pond as wildlife habitat enhancement, the applicant would need to demonstrate that water in the pond would be suitable for wildlife use.

Section 342.100 Page 28 has been changed to reflect how long the pond will remain.

R645-301-342, The applicant needs to investigate whether other enhancement measures could be used at this site during the reclamation phase of operations. The application should contain a discussion of potential enhancement measures.

See section 342.200 Page 28 for additional enhancement measures.

R645-301-342, Comments in the application about optimizing the edge effect should be eliminated unless the applicant provides specific means by which this will be accomplished.

Comments about optimizing the edge effect have been removed from Section 342.210 Page 28.

R645-301-542, Plate 5-6 must show the center lines for the cross section in Plate 5-7A and Plate 5-7B.

After discussion with Wayne Western it was determined that Plate 5-6 did shown the center lines for cross sections in Plates 5-7A and 5-7B and is adequate.

R645-301-542, The Permittee must give the Division detailed cross section that show highwall elimination. The Division suggests that the cross sections that show highwall elimination be perpendicular to the cross section on Plate 5-7A and Plate 5-7B.

Plate 5-7c shows a cross section through the rock slope portals. No highwalls will be created with the rock slopes.